Minutes of Tuesday 2/4/03 RR BPM Meeting to discuss preamps and transition modules/crates

Attending: M. Bowden, J. Crisp, P. Prieto, D. Voy, B. Webber, S. Zimmermann

Purpose of meeting was to focus efforts to:
--- Identify decisions that must be made and information needed before making those decisions in order to procede with transition module/crate final designs. Decisions will, if useful, be identified at two levels: 1) those needed to proceed with electrical and mechanical design and layout (e.g. circuit topology and mechanical constraints) and 2) those needed before final fabrication (e.g. actual gains and resistor values).
--- Identify responsibilities for contributions to this topic for RR BPM Technical Design Review tentatively set for Feb. 17.

Bob offered to the group his prelimary "Project Organization" chart and asked for feedback outside of the meeting. Bob offered his prelimary functional definition write-ups for the preamp and the transition module, noted the tentative date of Feb. 17 for design review, and indicated that an implication of the Org. chart is identification of the person(s) responsible for contributions to the design report. Specific to the subsystem discussed at this meeting, Peter shall provide preamp and calibration board write-ups and Mark (following discussion with Peter) shall provide transition module/crate system write-up. Bob asked for these written inputs in one week.

Peter described some of the content of his write-up on system dynamic range and there was some discussion. Bob has additional contributions he needs to provide before next week on dynamic range issues.

Peter described his conceptual vision of the transition modules and crates. A transition module will be an 8 channel board. Each channel serves as a receiver, (manually) selectable amplifier, and bandwidth limiting circuit for a BPM signal from a preamp. The selectable gains are to adjust for signal attenuation due to various cable lengths. Each transition module will be a 6U high by 160mm deep board. Up to 9? transition modules will be housed in an open frame 6U crate; crates and channels will be grouped in much the same way as will the digitial receiver cards in their VME crates. Each transition crate is also expected to contain one calibration signal driver board. The transition crates are also expected to distribute power and calibration control signals to the twisted-pair cables to the preamps.

Mark showed a conceptual drawing of a transition module with input cables and backplane connection. That led to discussion of cabling/connector interfaces to the present twisted-pair signal cables. The concept had been to attach these cables directly to the back of the individual transition modules. Peter noted that in MI-60 at least there is likely a problem with the cables being too short. Options were discussed, but the decision (pending inspections of the situation at each building) was to stick to the original concept and make cable extensions as necessary.

There was discussion of the calibration signal driver board, control signals to that boards, etc. Sergio noted that the transition module/crate system now consists of three separate board layouts - transition module, cal driver module, and crate backplane.

Assignments -
= Assess cable situation in service buildings - Mark and Peter
= Produce conceptual functional/design writeups - preamp (Peter), cal driver (Peter), transition module/crate system (Mark)
= Continue work on drawings and sketches of transition module/crate/cabling system - Mark
= Informal working discussions on specific design issues need to continue among the responsible individuals to arrive at concensus on final design details for each subsystem

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